

I Claim:

1. A synchronous network, comprising:

nodes transmitting data to one another in a predefined sequence for a predefined duration, a plurality of said nodes outputting a synchronization signal defining a reference time for a synchronization of said nodes.

2. The network according to claim 1, wherein the synchronization signal has at least one of a time profile and a duration that the synchronization signal can be identified as the synchronization signal even if other synchronization signals which are output by different ones of said nodes are overlapping on one another.

3. The network according to claim 1, wherein the synchronization signal is encoded using one of an NRZ code, a XERXES code, and a Manchester code.

4. The network according to claim 1, wherein the synchronization signal has a duration which is longer than a maximum signal transit time occurring inside the network.

5. The network according to claim 1, wherein a respective node of said nodes which wishes to synchronize with one or more others of said nodes initially observes for a

predetermined time to determine whether another one of said nodes is outputting the synchronization signal or other data, and said respective node outputs the synchronization signal if this is not the case.

6. The network according to claim 5, wherein said respective node wishing to synchronize with one or more others of said nodes outputs the synchronization signal during a synchronization phase only if said respective node has detected that no other one of said nodes is outputting the synchronization signal or the other data.

7. The network according to claim 5, wherein said respective node wishing to synchronize with one or more others of said nodes outputs further data which identifies said respective node in a time slot assigned to said respective node after outputting the synchronization signal or receiving the synchronization signal from another one of said nodes.

8. The network according to claim 7, wherein said respective node wishing to synchronize with one or more of said nodes defines a chronological position of time slots assigned to it as a function of the synchronization signal which is output by said respective node or received by said respective node from another one of said nodes.

9. The network according to claim 1, wherein the synchronization signal is output in a specific time slot of a time slot cycle used.

10. The network according to claim 9, wherein the specific time slot is a global time slot in which all of said nodes are allowed to output specific signals and specific data.

11. The network according to claim 1, wherein all of said nodes output the synchronization signal.

12. The network according to claim 7, wherein said respective node wishing to synchronize with one or more others of said nodes defines a chronological position of time slots assigned to it as a function of the synchronization signal which is output by said respective node or received by said respective node from another one of said nodes and as a function of received data which others of said nodes have output in their assigned time slots, in order to identify itself to others of said nodes.

13. The network according to claim 7, wherein said respective node wishing to synchronize with one or more others of said nodes defines a chronological position of time slots assigned to it as a function of received data which others of said

nodes have output in their assigned time slots, in order to identify itself to others of said nodes.